HARRIS

TECHNICAL REQUIREMENTS SPECIFICATION

VOLUME II
FOR
MAF/TIGER ACCURACY IMPROVEMENT PROJECT
(MTAIP)
PHASE 2

U.S. CENSUS BUREAU CONTRACT NO: 50-YABC-2-66005
DOCUMENT CONTRON NUMBER: 7011405
REVISION J

10 AUGUST 2004

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HARRIS

MAF/TIGER

Accuracy Improvement Project

Conflation and Portrayal Scenarios

Conflation Scenario:

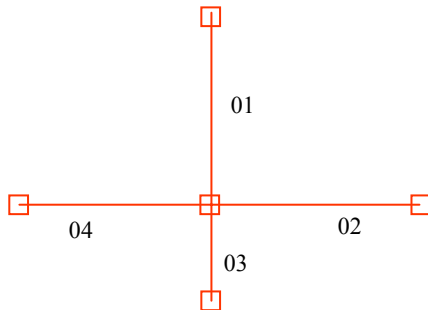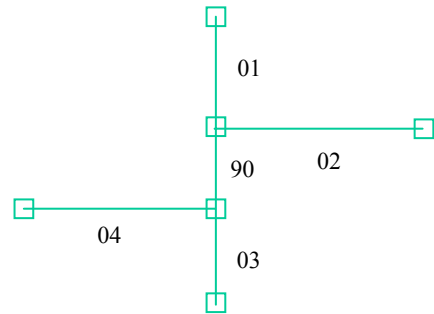|		
Original	*Definition of the problem*	
	TIGER Portrayal	**Source Portrayal**
	Node ▢——— Road ———▢ ▢- - - - - - - -▢ Other feature	▢——— Road ———▢ ▢- - - - - - - -▢ Other feature
	A graphic portraying the scenario as it exists in original TIGER.	*A graphic portraying the same scenario as it exists in the source file*
Suggested Fix	**Adjusted TIGER portrayal**	**New TIGER vectors**
	GIS Source TEMPLATE	
	A graphic portraying the improved TIGER after after adjustment to the source material	*A graphic portraying any new vectors added to the TIGER file based on the source material*
End Result	**Solution**	**Delivered Improved TIGER**
	Text explanation of the solution	*A graphic of the portrayal solution including both improved TIGER and New TIGER*
Summary		

Title: *Descriptive Title for Scenario*	**No:** *Scenario Identifier*	**Rev:** *Scenario Revision*

Problem Description:

Definition of the scenario describing the problem space

Problem: *TIGER Portrayal* | *Source Imagery*

A graphic depicting the portrayal of the involved data as it existing in TIGER files | *A graphic depicting the portrayal of the involved data as it existing in the source material*

Imagery Source

Solution:

TEMPLATE

Definition of how the scenario is to be addressed from a process perspective

Suggested Fix: *Adjusted TIGER* | *Delivered Improved TIGER File*

A graphic depicting the portrayal of the existing TIGER data after adjustment to the Source Material | *A graphic depicting the portrayal of the final delivered Improved TIGER file.*
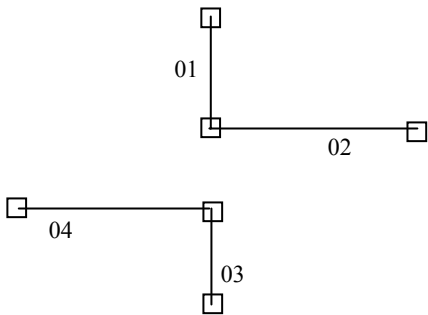
Conflation Scenario: #1 Point Split

This scenario exists when the TIGER vectors depict a common intersection point but the source material portrays a "split" intersection, or independent intersection points, for two vectors.

Original	*TIGER Portrayal*	*Source Portrayal*

Original — *TIGER Portrayal*: 01, 04, 02, 03

Original — *Source Portrayal*: 01, 90, 02, 04, 03

Suggested Fix — *Adjusted TIGER portrayal*: 01, 02, 04, 03

Suggested Fix — *New TIGER vectors*: 90
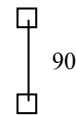
End Result — *Solution*

This scenario is addressed by splitting the intersection point (see above) and adding a new vector (90) to reconnect the intersection (see above right).

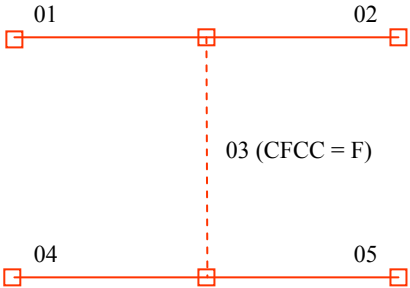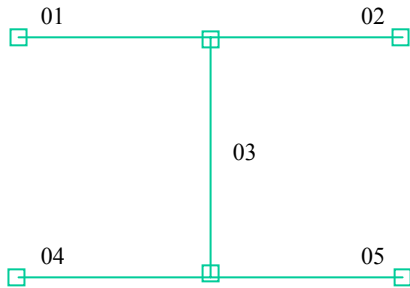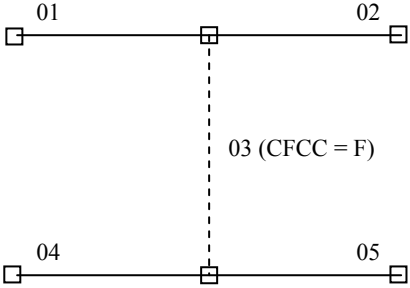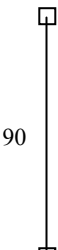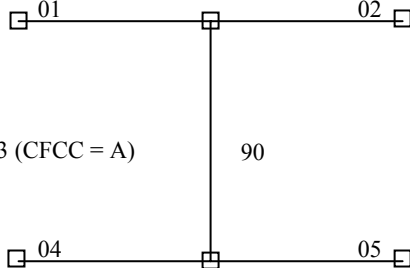**End Result** — *Delivered Improved TIGER*: 01, 02, 90, 04, 03
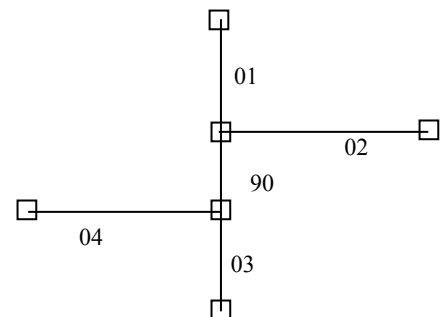
Summary

Use the Detach tool in TIGER CAT to split the node at the intersection. Move the vectors 01 and 02 together at the intersection as portrayed in the source material, and move the vectors 03 and 04 together in the same manner. Use the Add New Tool to insert a new vector to complete the chain as indicated in the Delivered Improved TIGER illustration.
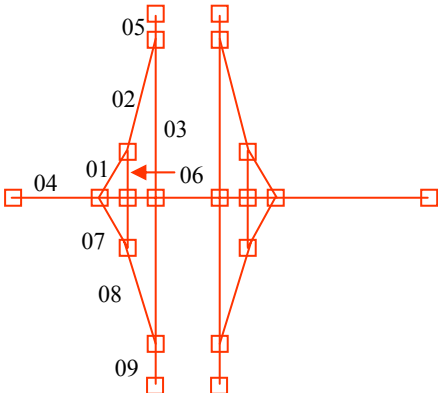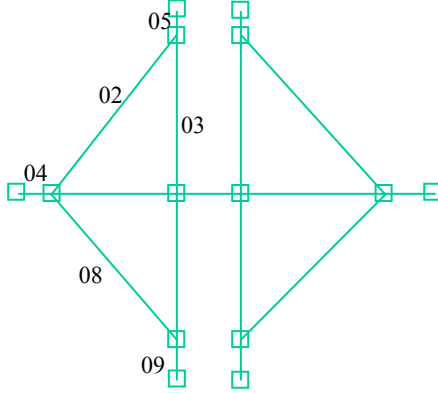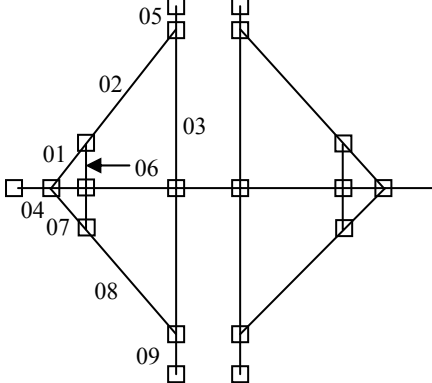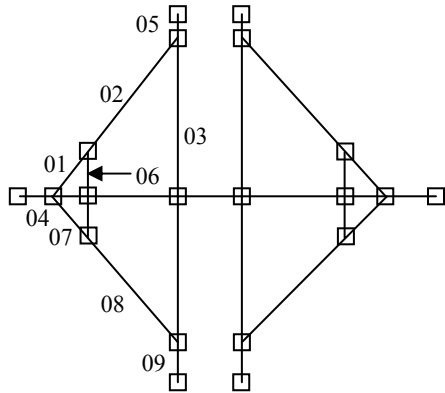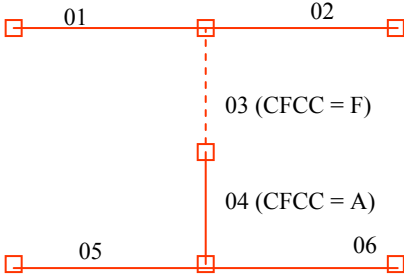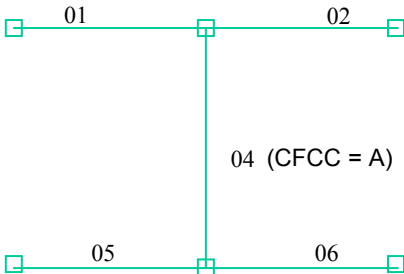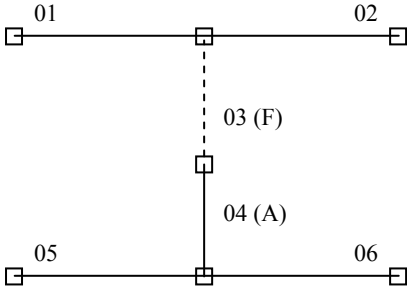
Conflation Scenario: #2 Point Merge
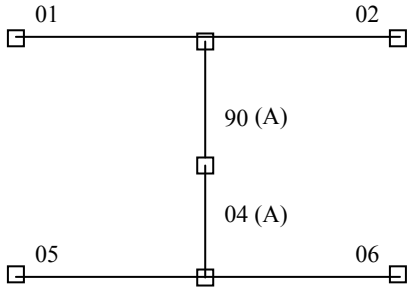
This scenario exists when the TIGER vectors do not depict a direct intersection of two vectors (02 & 05) but the source material depicts the intersection as a common point.

Original	*TIGER Portrayal*	*Source Portrayal*
	01 02 03 05 04	01 05 02 04
Suggested Fix	*Adjusted TIGER portrayal* Delete Circle 01 05 02 04	*New TIGER vectors*
End Result	*Solution* This scenario is addressed by the deletion of the connecting vector (03). The Delete Circle is an indicator within the TIGER CAT software indicating that a TIGER vector has been marked for deletion.	*Delivered Improved TIGER* 01 05 02 04

Summary

Use the Snap Editor tool on TIGER CAT to snap vectors 02 and 05 to the same end node. Have the Show Delete Circles function turned on so that the indicator shows that the vector 03 is marked for deletion. The delete circle is the analyst's indicator that a point merge operation has taken place.

Conflation Scenario: #3 Reverse Offset

This scenario exists when the TIGER vectors depict the intersection of two vectors (02/05) with a common vector string (01/03/04) with an orientation that is reverse to that depicted by the source material. In this case the reversed offset condition occurs when the TIGER vectors have been matched to the source material via attribution (e.g. same street name).

Original

TIGER Portrayal

01
02
03
05
04

Source Portrayal

01
90
03
02
04

Suggested Fix

Adjusted TIGER portrayal

01
02
03
04

New TIGER vectors

90

End Result

Solution

This scenario is addressed with a "Topo non-match" process. Vector 05 is non-matched and reported in the Metadata file with an Action code of "T" (Topological non-match). Vector 02 is matched to the source material. A new vector (90) is added to match the source material and reported in the Metadata file with the <TPO> Information Field identifying the associated (removed) TLID (05) which is being re-portrayed.

Delivered Improved TIGER

90
01
02
03
04

Summary

Use the TIGER CAT Add/Delete Tool to mark select the TIGER vector 02 for deletion and relation to the source vector 02. Leave 05 as unmatched, and use Add New tool to add vector 90 to the TIGER file.

Conflation Scenario: #4 Coincident Non-visible and Visible Features

This scenario exists when the TIGER vectors depict a non-visible feature (CFCC = F), however the source material portrays a visible feature (e.g., a road) in roughly the same location.

Original

TIGER Portrayal

01   02

03 (CFCC = F)

04   05

Source Portrayal

01   02

03

04   05

Suggested Fix

Adjusted TIGER portrayal

01   02

03 (CFCC = F)

04   05

New TIGER vectors

90

End Result

Solution

This scenario is addressed by adding the source material vector as a new vector (90). Correlation to the non-visible TIGER feature will not be made. The new vector (90) will be located in the same position as the existing non-visible feature (03). The existing non-visible feature (03) is matched so that (90) is exactly colinear with (03).

Delivered Improved TIGER

01   02

03 (CFCC = A)   90

04   05

Summary

Use TIGER CAT Snap Editor Tool to match the non-visible vector to the source material counterpart. The vector will be matched as a "CF Alpha Mismatch" and take on that mark color (as defined in the color chooser). During the output process, the software will automatically add a new vector in the place of the non-visible vector with the attribution of the source material.
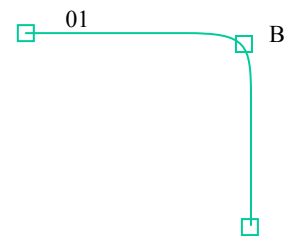
Conflation Scenario: #5 TIGER with Greater Detail

This scenario exists when the TIGER vectors depict greater detail than the source material and require positional movement.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

This scenario is addressed based on cartographic judgment. Use best effort to match the source material vectors to their TIGER counterparts both geometrically and via attributes (e.g. name). The TIGER vectors deemed to correspond to source vectors are moved to the source material location and the TIGER vectors that could not be correlated are rubbersheeted. The vectors will be reported as moved in Delivered Improved TIGER file with the Means Code indicating whether a match to source material or rubbersheeting occurred.

Delivered Improved TIGER

Summary

Use the TIGER CAT Snap Editor tool to snap the TIGER vectors to their corresponding source vectors using best cartographic judgment.

Conflation Scenario: #6 Visible Feature Extension Based on Non-Visible Feature

This scenario exists when the TIGER vectors depict a non-visible feature (CFCC = F) that connects a visible feature (e.g. road) to another TIGER vector and the source material depicts the visible feature as completing the connectivity that the non-visible feature appears to provide.

Original

TIGER Portrayal	*Source Portrayal*

- 01 02
- 03 (CFCC = F)
- 04 (CFCC = A)
- 05 06
- 04 (CFCC = A)

Suggested Fix

Adjusted TIGER portrayal	*New TIGER vectors*

- 01 02
- 03 (F)
- 04 (A)
- 05 06

End Result

Solution

The visible TIGER feature (04) matches the source material by attribution (e.g. name) and requires extension. This is accomplished by adding a new vector (90) to complete the portrayal of the feature shown in the source material. The non-visible feature is identified as Non-match and rubbersheeted.

Delivered Improved TIGER

- 01 02
- 90 (A)
- 04 (A)
- 05 06

Summary

Use the TIGER CAT Snap Editor to mark vector 03 as matched to the source material. It will be marked on the screen as a CF Alpha Mismatch and a new vector will be generated with the source material attribution during the output process.

Conflation Scenario: #7 Source Material with Extra Nodes

This scenario exists when the source material depicts a vector with more node points than the corresponding TIGER vector
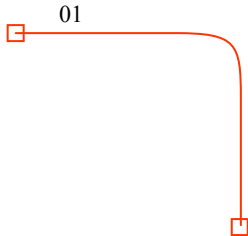
Original

TIGER Portrayal

01

Source Portrayal

01   B

Suggested Fix

Adjusted TIGER portrayal

01

New TIGER vectors

End Result
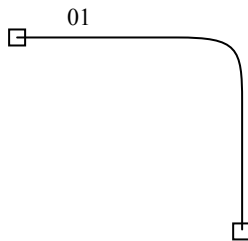
Solution

This scenario is addressed by realignment of the TIGER vector to the source material without addition of any new nodes.

Delivered Improved TIGER

01

Summary
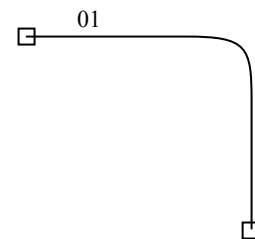
Use the TIGER CAT Snap Editor tool to snap the TIGER vector to the source material. The extra node in the source will have no effect on the match.

Conflation Scenario: #8 Source Material with Greater Detail

This scenario exists when the source material depicts a feature network with more vectors than the corresponding TIGER network.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

This scenario is addressed by adding new vectors to portray the feature network defined by the source material. The new vector (90) is created and reported in the Delivered Improved TIGER file.

Delivered Improved TIGER

Summary

Use the TIGER CAT Snap Editor Tool to match vectors 01, 02, and 03 to the source material. Use the Add New tool to add vector 90.

Conflation Scenario: #9 Contiguous TIGER vs. Non-Contiguous Source Material
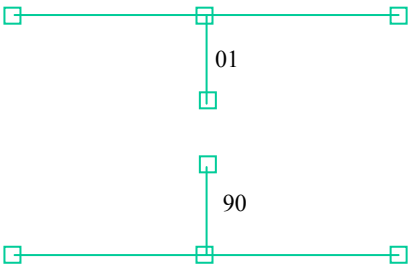
This scenario exists when the source material depicts a feature network with a gap where the TIGER network depicts a contiguous vector (01).
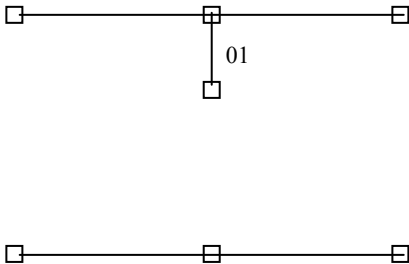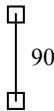
Original

TIGER Portrayal	*Source Portrayal*
01	01 90
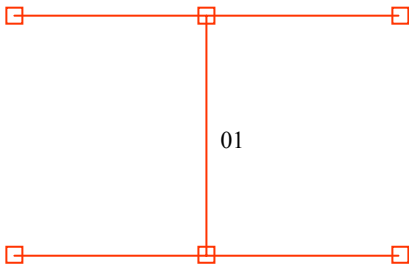
Suggested Fix

Adjusted TIGER portrayal	*New TIGER vectors*
01	90

End Result

| *Solution*	*Delivered Improved TIGER*
This scenario is addressed by detaching TIGER vector 01 and matching it. A new vector (90) is added to match the source material.	01 90
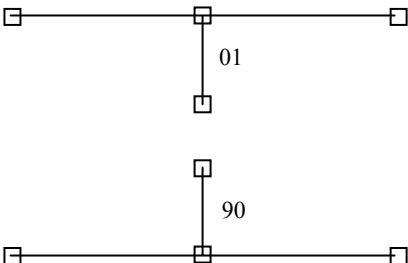
Summary

Use the TIGER CAT Detach tool to separate the end node of vector 01 from one end. Use the Snap Editor tool to snap 01 to one of the matching source material vectors. Use the Add New tool to add vector 90.

Conflation Scenario: #10 Shape Modification of Non-Matched Feature

This scenario exists when the TIGER data contains a feature (01), potentially without any Shape Points, that is not matched to any feature in the source file, but must be modified in order to enable the matching of adjacent visible features to the source material.
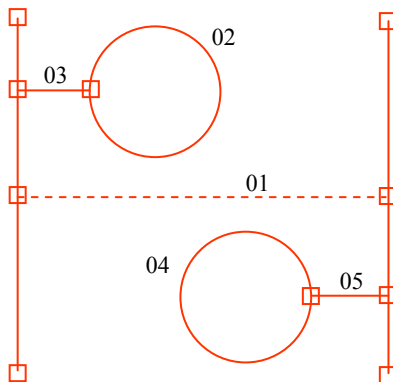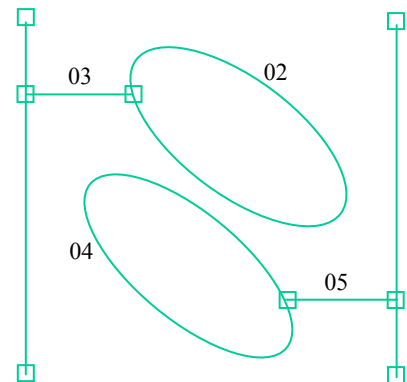
Original

### TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal
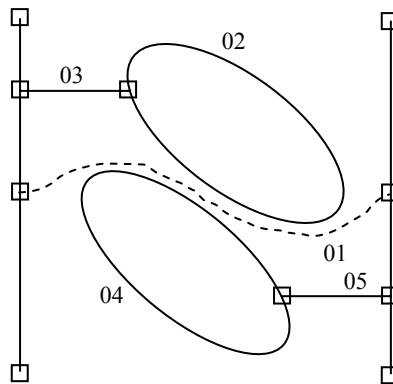
New TIGER vectors

End Result
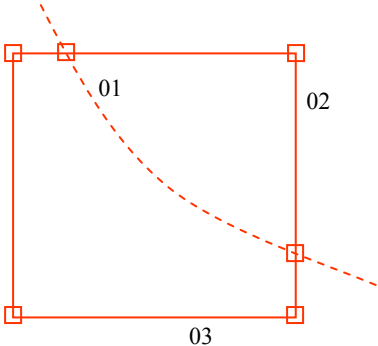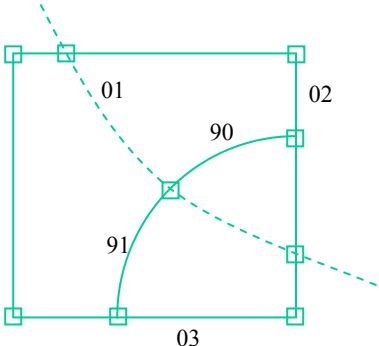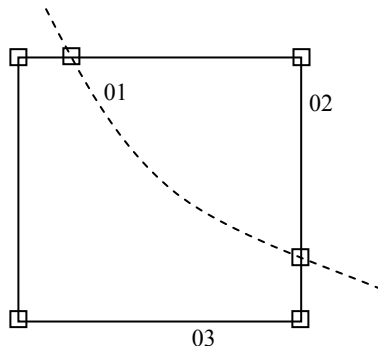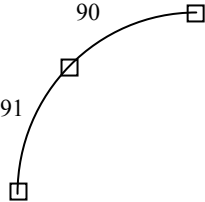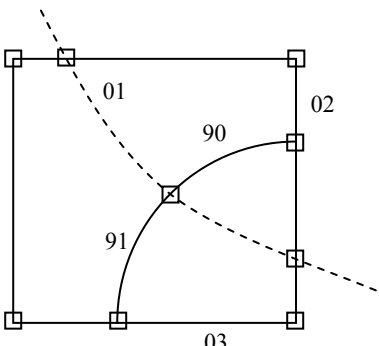
Solution

This scenario is addressed by adding shape points to the non-visible feature (01) to enable intersections with other existing TIGER vectors to be avoided as they are adjusted. The invol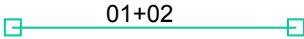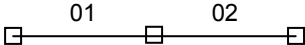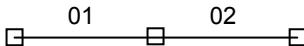ved vectors are reported as moved in the delivered Improved TIGER file with the Means Code indicating whether a match to source material or a proportional move occurred (as is the case with the non-visible feature whose shape was affected). To the degree possible the endpoints of the non-visible feature are to remain in their original position.

Delivered Improved TIGER
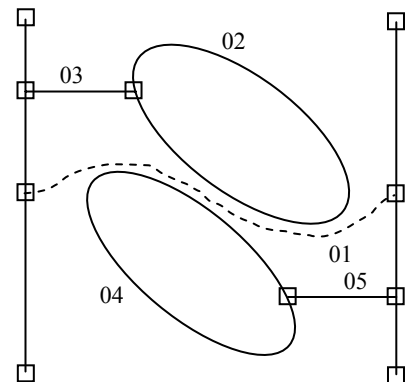
Summary

Use the Snap Editor tool's Insert Shape Points function to add the minimum number of shape points sufficient to vector 01 to avoid any topological conflicts with 02 and 04. Do not mark 01 as matched.

Conflation Scenario: #11 New Vector Intersection with Existing TIGER Vectors

This scenario exists when a new vector is present in the source material that does not exist in the TIGER data.The new vector crosses existing TIGER vectors.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

This scenario is addressed by adding a new vector (90/91) to match the source material. Where an intersection occurs between the new vector and existing vectors (01 in this case) a node will be created for the new split vectors. Existing TIGER vectors (01/02/03) that have been intersected by the new vectors (90/91) will report a Topo Information File in the Metadata file identifying that a new vector was created that intersects the existing vector.

Delivered Improved TIGER

Summary

Use the TIGER CAT Snap Editor tool to match TIGER vectors to the source material. Use the Add New tool to add vectors 90 and 91.

Conflation Scenario: #12 TIGER with Extra Nodes

This scenario exists when the TIGER data portrays a feature with more node points than the source material.

Original

TIGER Portrayal

01   02

Source Portrayal

01+02

Suggested Fix

Adjusted TIGER portrayal

01   02

New TIGER vectors

End Result

Solution

This scenario is addressed by matching the common endpoints and rubbersheeting the TIGER node that does not have a corresponding source material node to the source material line. The involved vectors are reported as moved in the Delivered Improved TIGER file with a Means Code indicating that they were matched to the source material.

Delivered Improved TIGER

01   02

Summary

Use the TIGER CAT Snap Editor tool to snap vectors 01 and 02 to the source material.

Conflation Scenario: #13 Alternate Side Location of Features

This scenario exists when the TIGER data portrays a feature on the opposite side of the road from the source material. In this case, the attribution (e.g. road name) is used to determine that the features in question are one and the same.

Original

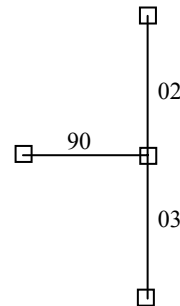*TIGER Portrayal*
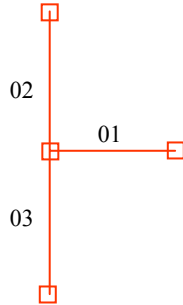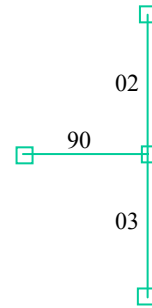
02
01
03

Source Portrayal

02
90
03

Suggested Fix

Adjusted TIGER portrayal

02
03

New TIGER vectors

90
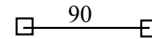
End Result

Solution

This scenario is addressed through the "Topo non-match" process. A new vector (90) is added which matches the source material portrayal. The TIGER vector (01) is included in the Delivered Improved TIGER and reported with a "T" (topo non-match) Action Code in the Metadata file. The new vector added (90) is reported in the TIGER/Line_New file with a new TLID and limited attribution. The Metadata for the new vector will include the Topology Information Field variable record that will include the TLID of the deleted vector (01) as a reference. Note: if 01 and either 02 or 03 are floating, 01 can be matched to 90 and "flipped".

*Delivered Improved TIGER*

02
90
03

Summary

Use the TIGER CAT Add/Delete tool to select vector 01 as the candidate for deletion and vector 90 as the candidate for the new vector which will be assigned the attributes of vector 01.
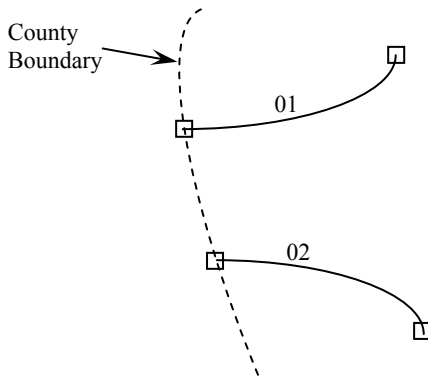
Conflation Scenario: #14 Data Outside the County Boundary

This scenario exists when the source material portrays a feature (of any feature class) as extending outside the County Boundary.

Original
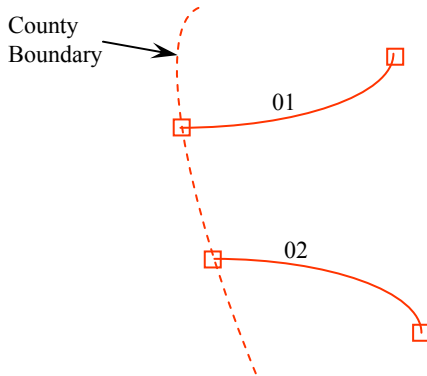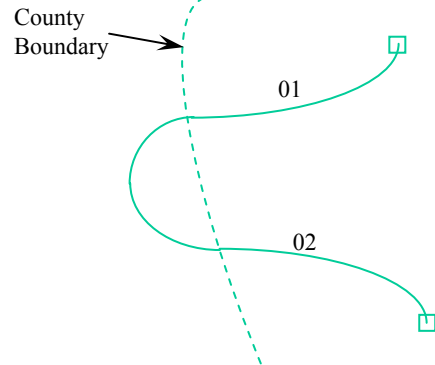
TIGER Portrayal

County Boundary

01

02

Source Portrayal

County Boundary

01

02

Suggested Fix

Adjusted TIGER portrayal

County Boundary

01

02

New TIGER vectors

End Result

Solution

This scenario is addressed by matching the existing TIGER vectors (01/02) to the source material but not adding any new vectors to capture the feature portrayal outside the County boundary.
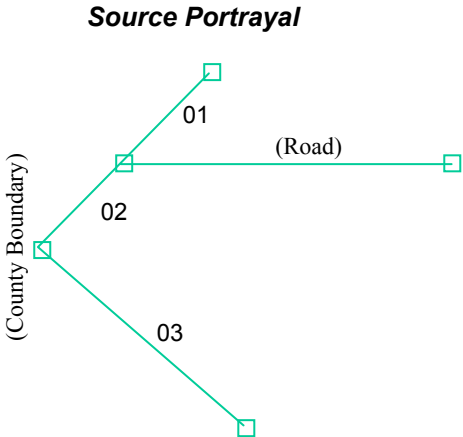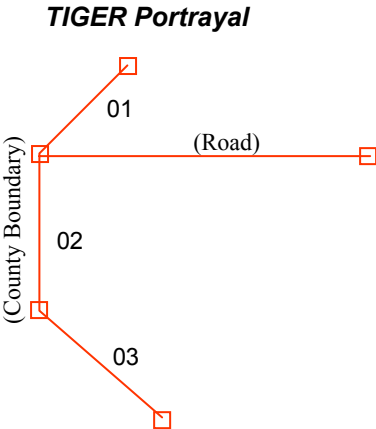
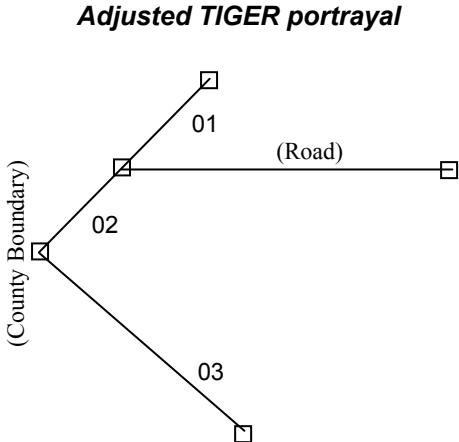### *Delivered Improved TIGER*

01

02
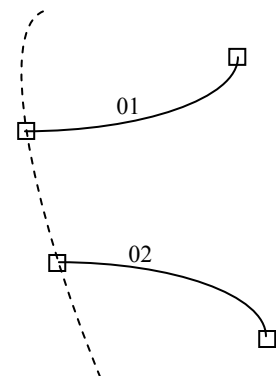
Summary

Use the TIGER CAT Snap Editor tool to match vectors 01 and 02 to the source material. Any vectors that fall outside the county boundary should be left as non-matched. If the source material shows vectors that fall outside the county boundary, do not add them as new.

Conflation Scenario: #15 County Boundary Conflict

This scenario exists when the source material portrays the extent of the County boundary differently than the TIGER data.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result
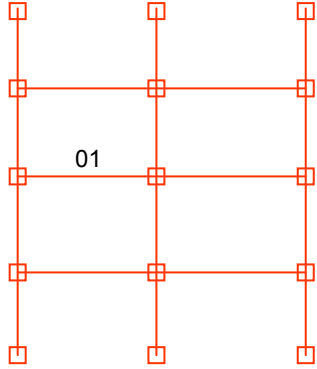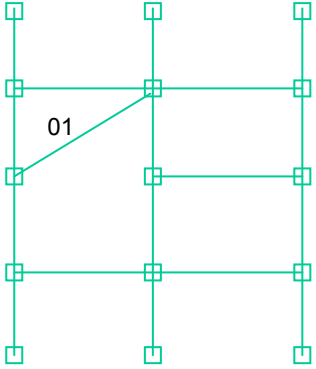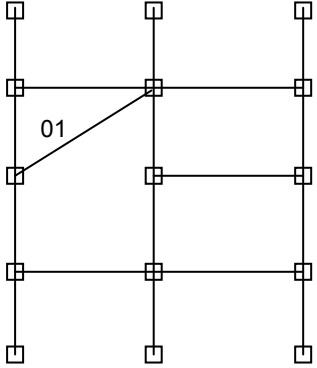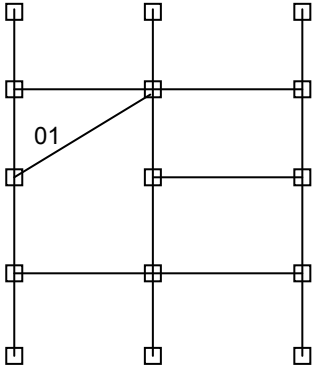
Solution

This scenario is addressed by matching the TIGER portrayal of the county boundary to the portrayal of the source material. The involved vectors are reported as moved in the delivered Improved TIGER file with a Means Code indicating that they were matched to the source material. Associated county vectors are rubbersheeted as necessary.

Delivered Improved TIGER

Summary

Use the TIGER CAT Snap Editor tool to match the TIGER vectors to the source material.

Conflation Scenario: #16 Detach Line

This scenario exists when the source material depicts a line intersecting at a different point than the TIGER.

Original
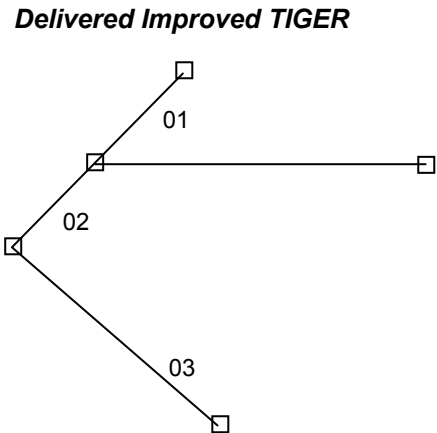
TIGER Portrayal

01

Source Portrayal

01

Suggested Fix

Adjusted TIGER portrayal

01

New TIGER vectors

End Result

Solution

This scenario is addressed by detaching (01) and reattaching the vector so that it matches the source material.

Delivered Improved TIGER

01

Summary

Ensure that the Sticky Nodes function is activated in the Tools window of the TIGER CAT display menu. Use the Detach Tool to detach vector 01 at the intersection. Turn on the Snap Editor tool and drag the node to its proper intersection as indicated in the source material. The Sticky Nodes function should accomplish the reattach. Ensure 01 is marked as matched.

Conflation Scenario: #17 Cul-de-sac Portrayal (GIS Sources)

This scenario exists when the source material portrays Cul-de-sacs as "lollipops" and the TIGER vector has either a larger loop or no loop.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

01
A41
02
03

New TIGER vectors

90
A41
91
A41
92

End Result

Solution

In the case where a larger loop is represented in the TIGER/Line, simply match to the source file. In the case where there is no loop, add the loop in the new file. The requirement is to portray TIGER exactly as the source file appears.

Note: if the endpoint of 03 has a cul-de-sac characteristic associated with it, that characteristic should be deleted.

Delivered Improved TIGER

01
90
91
02
03
92

Summary

Use the TIGER CAT Snap Editor Tool to match 01, 02, and 03 to the source material. Use the Add New tool to add vectors 90, 91, and 92.
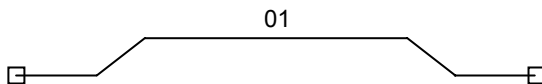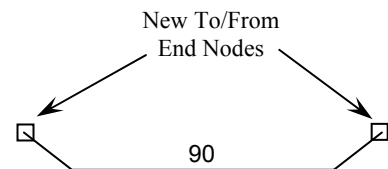
Conflation Scenario: #18 Double-Line Feature Portrayal

This scenario exists when the source material portrays a feature with a double-line versus single line representation.

Original

**TIGER Portrayal**
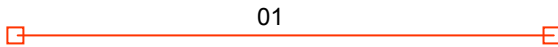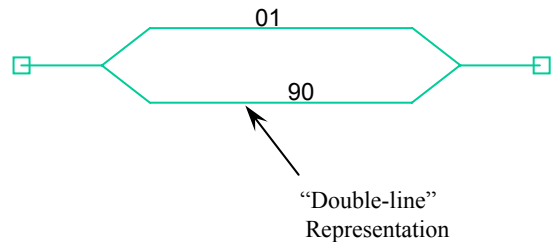
01

Source Portrayal

01

90

"Double-line" Representation

Suggested Fix

Adjusted TIGER portrayal

01

New TIGER vectors

New To/From End Nodes

90

End Result

Solution

This scenario is addressed by adjusting the shape of the existing TIGER vector (01) to match one leg of the source material's representation. The portrayal is completed by adding a New vector (90) to represent the second leg of the portrayal. The Production Analyst will adjust the upper leg and add new lower leg to portray as New. In cases where the source material portrays the entire feature with a double-line, the existing TIGER vector is matched to the north leg and the south leg is portrayed as New. Similarly, a TIGER vector is matched to the east side, and the west is added as New.

Delivered Improved TIGER

01

90
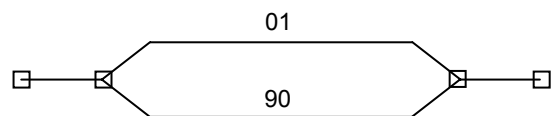
Summary

Use the TIGER CAT Snap Editor Tool to Snap the single vector (01) to one consistent side of the double line feature. Drag the any shape points as necessary to achieve the match. Use the Add New tool to add the other side (90). The Add New tool will insert the nodes as required.

Conflation Scenario: #19 Snap to Feature

This scenario appears when a line in the source material file extends to an intersection or a Tiger vector does not fully extend to an intersection.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

The line in the Tiger/Line file is considered a match; however the extension is NOT made from this line. A new line, consisting only of the 'snap-to-feature' portion of the matched line is created and assigned a new TLID.

Delivered Improved TIGER

Summary

Use the TIGER CAT Snap Editor tool to match vector 03 to the source material, preserving the length of the existing vector 03. Use the Add New tool to add the remaining segment as indicated in the source file. Do not use the Sticky Nodes function to lengthen vector 03 to match the source.

Conflation Scenario: #20 Single Line vs. Double-line Ramp Split

This scenario exists when TIGER depicts a Road feature with a single line and provides additional access detail (access ramps) and the source material depicts the same Road feature as a double line but does not provide access detail.
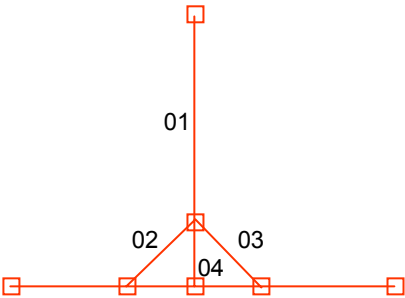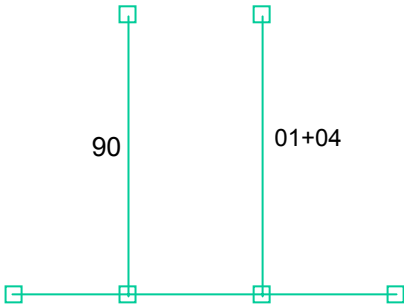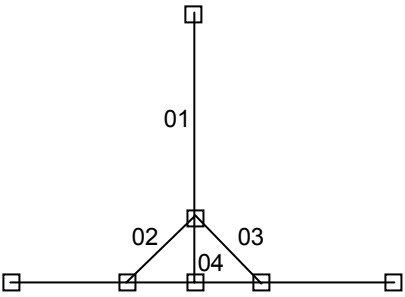
Original

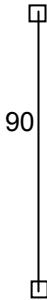### *TIGER Portrayal*

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

### *Solution*

This scenario is addressed by matching the TIGER vectors (01&04) to one of the two vectors in the source material based on best geometry match and creating a New vector to depict the second of the two double lines depicted by the source data (90). The access ramps (02 & 03) maintain their relationship to the adjusted TIGER vector (versus being split to the two vectors depicting the Road feature) and are reported as "Unmatched" in the metadata.
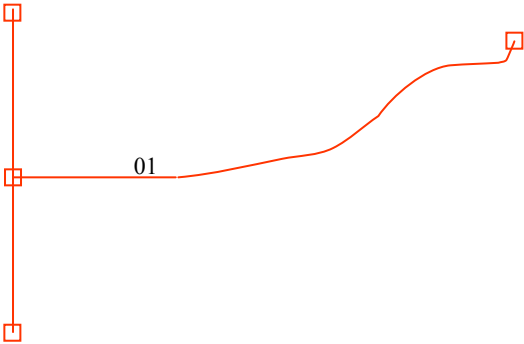
Delivered Improved TIGER

Summary
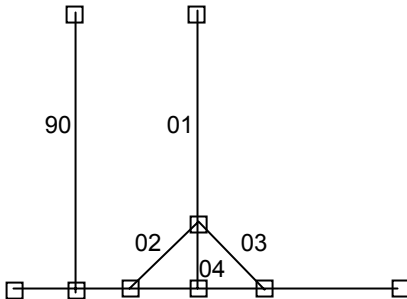
Use the TIGER CAT Snap Editor Tool to match the vectors 01 and 04 to one of the source material vectors (use cartographic judgment to determine which). Use the Add New Tool to add vector 90. Rubber sheet vectors 02 and 03, leaving them as non-matched.
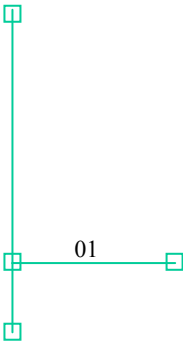
Conflation Scenario: #21 Dead End Road with Length Discrepancy

This scenario exists when TIGER depicts a feature (01) with a length significantly longer than what the source material depicts (90).

Original

TIGER Portrayal

01

Source Portrayal

01

Suggested Fix

Adjusted TIGER portrayal

01

New TIGER vectors

End Result
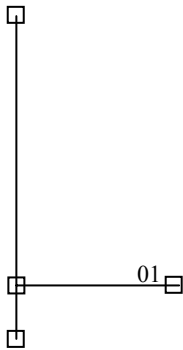
Solution
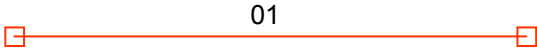
This scenario is addressed by matching the TIGER vector (01) to the source material.

Delivered Improved TIGER

01

Summary
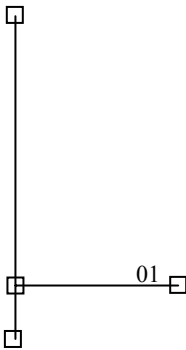
Use the TIGER CAT Snap Editor to match vector 01 to the source material. Do not worry about shrinking a very long TIGER vector is the source material calls for it.

Conflation Scenario: #22 Detached Star Network

This scenario exists when TIGER depicts a fully intersecting star network and the source material depicts the same network with disconnected legs.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

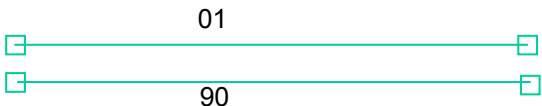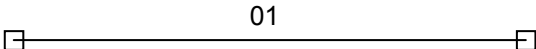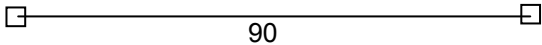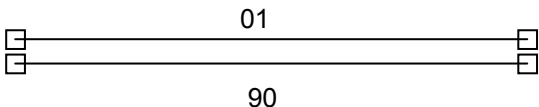This scenario is addressed by detaching vectors 02 & 03 from the star intersection point. Since in this case the source material is depicting a double line Road where the TIGER has a single lane Road vector 04 is subject to a point split with a new vector (91) being added to reconnect the road network. The second line (90 & 92) is added to depict the double line portrayal and any connecting spurs (e.g. 93) are added.

Delivered Improved TIGER

Summary

Use the TIGER CAT Detach, Add New, and Snap Editor tools to achieve the best cartographic rendition of complicated road networks. See a separate guidance scenario for intricate ramp structures.

Conflation Scenario: #23 Double Line Feature Matching and Representation

For all road and hydrographic features that are represented by a single line in TIGER, but are represented by either double road centerlines or double shorelines in the source material, a consistent portrayal along the length of the feature is ideal.

Original

TIGER Portrayal

01

Source Portrayal

01

90

Suggested Fix

Adjusted TIGER portrayal

01

New TIGER vectors

90

End Result

Solution

The TIGER vector (01) is matched entirely to north/west side of the same road in the source material and a new vector is added to the south/east side of the road.

Delivered Improved TIGER

01

90

Summary

Use the TIGER CAT Snap Editor Tool to match vector 01 and any extensions of the feature consistently to one side of the double line portrayal. Use the Add New Tool to add vector 90 and any extensions. The goal in this situation is to maintain consistency along the entire road feature in terms of matching the existing TIGER vector to the same side of the double line feature, and consistently adding the same side of the double line feature.

Conflation Scenario: #24 Single vs. Double Line Roads Involving Corporate Offsets
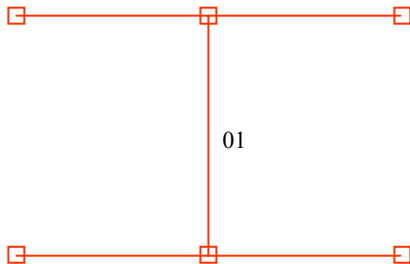
Where TIGER represents a single line road bounded by a corporate offset (CFCC= F) and the source material (local GIS files) represent the road with two lines.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

One lane will be matched (01) and the other brought in as a new line (90). The new line will be brought in on the opposite side of (01) from the corporate offset (04) so that the new lane does not coincide with the corporate offset.

Delivered Improved TIGER

Summary

Use the TIGER CAT Snap Editor to match the TIGER vectors to the source material. Rubber sheet the non-visible, maintaining shape and distance from other vectors as closely as possible. Use the Add New Tool to add the new vector on the opposite side of the road as the corporate offset. The goal is to not introduce another vector into the offset area.

Conflation Scenario: #25 Single vs. Double Line Roads Involving Corporate Corridors   Revision J

Where TIGER/Line represents a single lane road bounded by a corporate corridor (non-visible boundary CFCC=F) and the source material (local GIS files) represent the road with two lanes, the following match rule must be used:

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

One lane will be matched (01) and the other brought in as a new line (90). The corporate offset (03 & 04) will shifted so that the new line (90) can be accommodated.

Delivered Improved TIGER

Summary

Use the TIGER CAT Snap Editor Tool to snap vector 01, 05, and 06 and to rubber sheet the non-visible on the side where the new road will be added. Move the non-visible as little as possible, maintaining the relative shape of the vectors. Use the Add New Tool to add vector 90.

Conflation Scenario: #26 TIGER/Line Vector Not Represented in Source File

This scenario exists when the source material does not depict a feature that exists in the TIGER file.

Original

TIGER Portrayal

Source Portrayal

01

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result
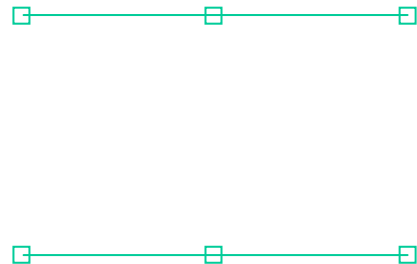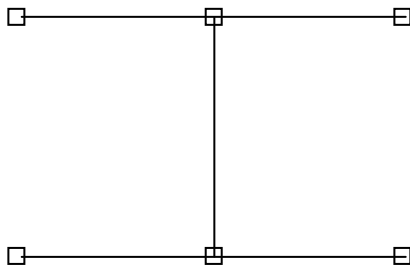
Solution

TIGER vector (01) is not marked as matched in the improved TIGER file.
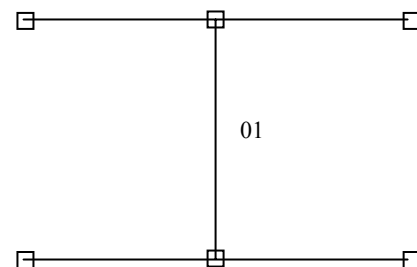
Delivered Improved TIGER

01

Summary

Use the TIGER CAT Snap Editor tool to match the TIGER vectors to their corresponding source material vectors. When a TIGER vector does not have a matching vector in the source material, it is simply left as un-matched.

Conflation Scenario: #27 Single vs. Double Centerline Roads Involving Area Landmarks

This scenario exists where TIGER represents a single road centerline bordered by an area landmark (CFCC D), such as a military reservation, airport, cemetery, et al, and the source material represent the road with two centerlines.

Original

TIGER Portrayal	*Source Portrayal*

CFCC = D   01

Suggested Fix

Adjusted TIGER portrayal	*New TIGER vectors*

CFCC =D   01

90

End Result

Solution	*Delivered Improved TIGER*

The single TIGER vector (01) is matched to one of the two centerlines, such that the second centerline does not intersect the area landmark.

01

CFCC = D   90

Summary

Use the TIGER CAT Snap Editor tool to match 01 to the source material vector on the same side. Use Add New tool to add vector 90. The goal here is not to split the area landmark by introducing another vector. Rubbersheet the area landmark if necessary.
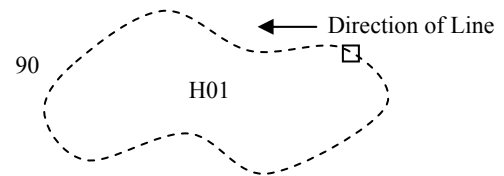
Conflation Scenario: #28 Lake Added as New Feature

This scenario addresses the situation when a lake is added as a single line new feature.

Original

| TIGER Portrayal	Source Portrayal
	90 Lake/Pond
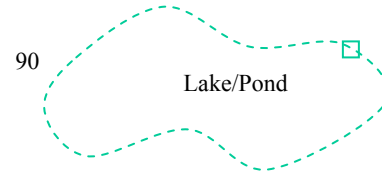
Suggested Fix

Adjusted TIGER portrayal	New TIGER vectors
	← Direction of Line 90 H01

End Result

Solution

The lake shoreline is included in the Improved TIGER file as a single line with the same from- and to- nodes. The hydrography fill field in the metadata is used to delineate which side of the shoreline gets the water fill. Line 90 has water fill on the left, as depicted in the New TIGER graphic. The direction should be consistently counterclockwise for all lakes added.
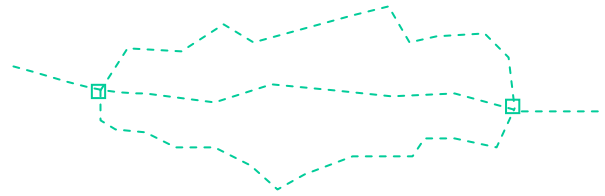
Delivered Improved TIGER

90 H01
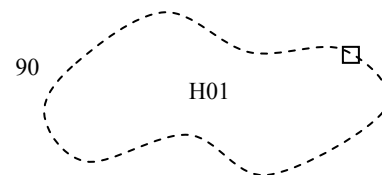
Summary

Use the TIGER CAT Add New Tool to add the Hydro feature to the Improved TIGER file. Alternatively, use the batch process "Add New Hydro" to add all new hydro features at the same time. Apply the Hydro Fill characteristics using the Hydro Fill tool.

Conflation Scenario: #29 Artificial Path Hydro Line

This scenario addresses the situation where a TIGER hydro vector (CFCC = H) is bounded by a hydro polygon from the local source file/NHD which also contains an artificial path vector.
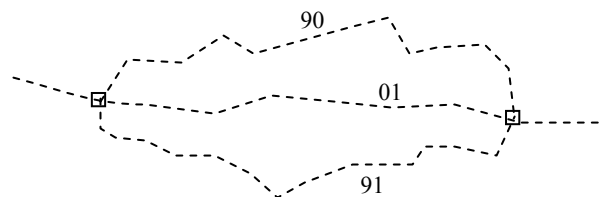
Original

TIGER Portrayal	Source Portrayal

Suggested Fix

Adjusted TIGER portrayal	New TIGER vectors

01

90

91

End Result

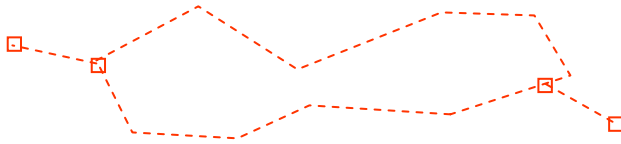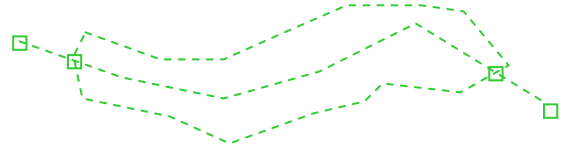| Solution	Delivered Improved TIGER

90

01

91
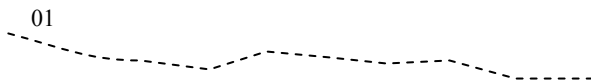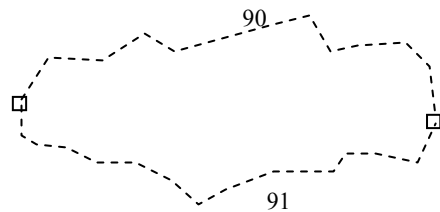
Summary

Use the TIGER CAT Snap Editor Tool to match vector 01 for its entire length. Use the Add New Tool to add vectors 90 and 91 (the nodes will be inserted automatically). Use the Hydro Fill Tool to apply the correct fill characteristic.
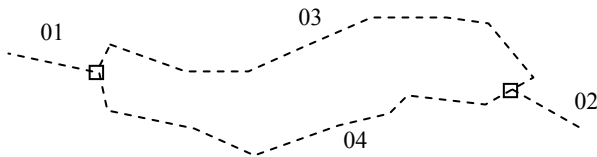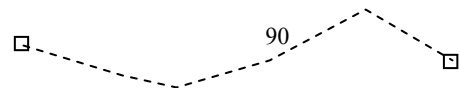
Conflation Scenario: #30 Artificial Path Hydro Line (NHD Source)

This scenario addresses the situation where TIGER shoreline (CFCC=H) is matched to shoreline from the source file, which also contains an artificial path hydro line.

Original

TIGER Portrayal
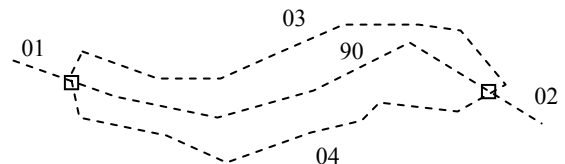
Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

01
03
02
04

New TIGER vectors
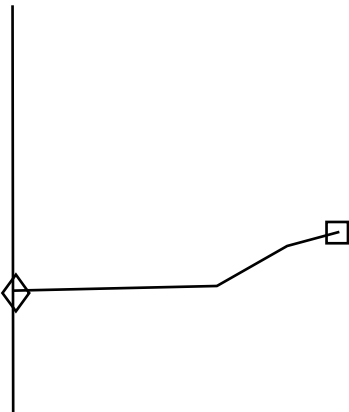
90

End Result

Solution

The areal water feature and its feeder branches are matched to the NHD source file. The Artificial Path (90) is added as a new vector.

Delivered Improved TIGER

03
01
90
02
04

Summary

Use the TIGER CAT Snap Editor Tool to match vectors 01, 02, 03, and 04 to the source material. Use the Add New Tool to add vector 90 to the Improved TIGER file.

MTAIP Portrayal Scenarios

Title: Driveway	**No:** 0001	**Rev:** 1

Problem Description:

This scenario exists when a driveway greater than 20m is not captured within the existing TIGER data. A driveway is a private road that connects a house, garage, or other building with the street.

Problem:

TIGER Portrayal

Source Imagery

Solution:

Driveways are captured from imagery if they are greater than 20 meters but less than 150 meters in length. (Driveways that are greater than 150 meters in length are captured as private roads instead of driveways.

Suggested Fix: *Adjusted TIGER*
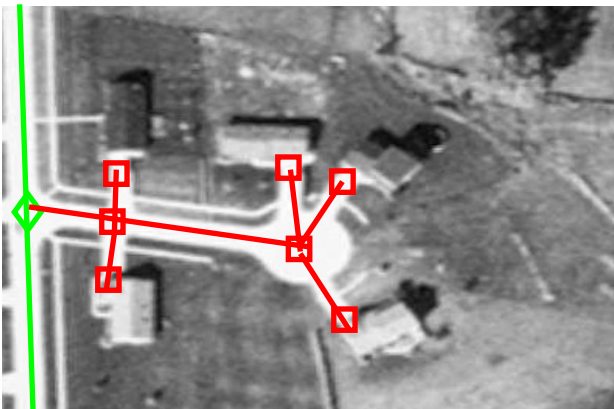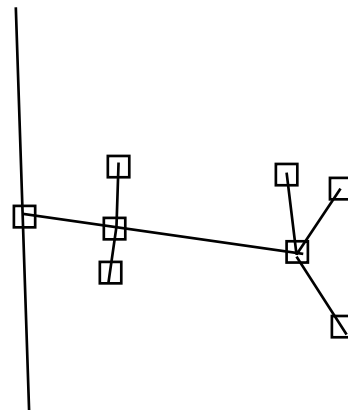
Delivered Improved TIGER File

MTAIP Portrayal Scenarios

Title: Cul-de-sac with Driveways	**No:** 0002	**Rev:** 1

Problem Description:

This scenario exists when source imagery shows a cul-de-sac and the feature is not present in the TIGER/Line file. A *cul-de-sac* is a street closed at one end; the closed end has an area large enough for vehicles to turn around.

Problem: *TIGER Portrayal*

Source Imagery

Solution:

A cul-de-sac, paved or unpaved, which has no median in the center, will be represented by placing one endpoint at the "entrance" and one endpoint at the "center" of the cul-de-sac. The entrance to the cul-de-sac is defined as the point at which the main road and the road to the cul-de-sac intersect. If qualified driveways are present, they will be drawn from the structure to the endpoint at the center of the cul-de-sac.

Suggested Fix: *Adjusted TIGER*

Delivered Improved TIGER File

MTAIP Portrayal Scenarios

Title: Cul-de-sac with Small Median	**No:** 0003	**Rev:** 1

Problem Description:

This scenario exists when a cul-de-sac with a median is present on source imagery.

Problem:

TIGER Portrayal
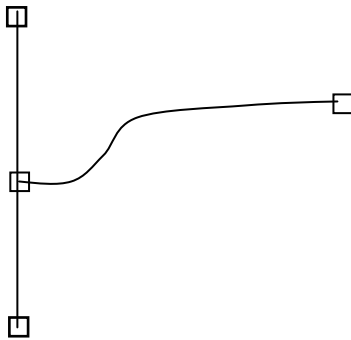
Source Imagery

Solution:

When cul-de-sacs have any kind of barrier to travel within it, the feature is captured as a circular road. The cul-de-sac characteristic is not assigned to the circular portion of the road.

Suggested Fix:

Adjusted TIGER
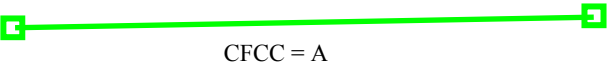

Delivered Improved TIGER File

MTAIP Portrayal Scenarios
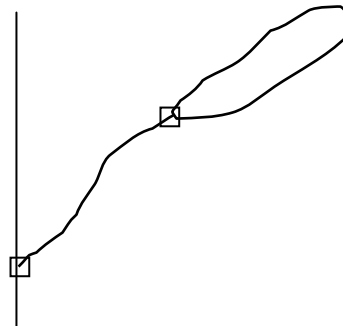
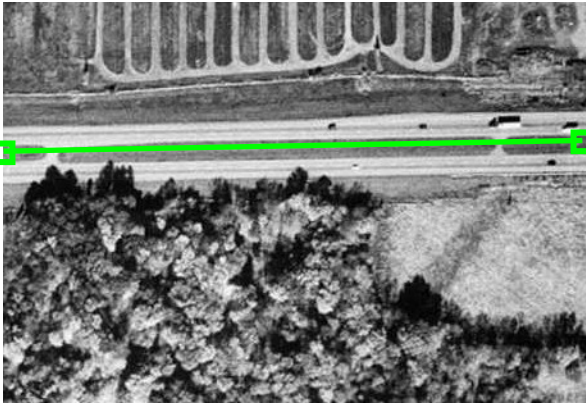| **Title:** Divided Roads/Highways	**No:** 0004	**Rev:** 1

Problem Description:

This scenario exists when a road has been improved from an undivided road/highway to a divided road/highway.

Problem:

TIGER Portrayal

CFCC = A

Source Imagery

Solution:

The representation for divided/non-divided roads/highways is based upon the presence of a physical barrier between lanes. If there is a physical barrier to travel, specifically, a grass, dirt, or concrete median of a width great enough to be seen on imagery or a visible Jersey barrier or guardrail, the road will be represented as two centerlines (one for each side of the median strip). The centerline will be located in the middle of the hard surface road on each side of the median strip regardless of the number of lanes.

The small road segments portraying crossing points between the lanes are not added.

Suggested Fix:

Adjusted TIGER

Delivered Improved TIGER File

CFCC = A

CFCC = A
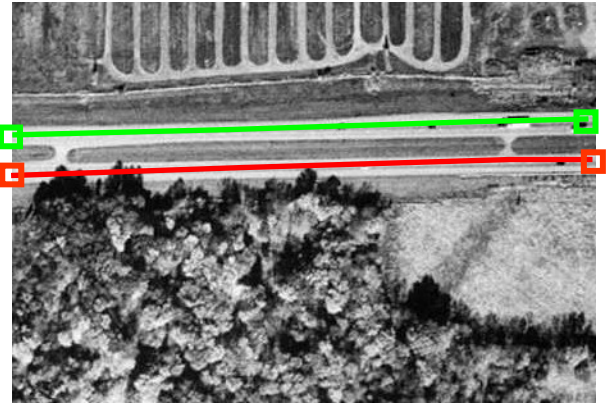
MTAIP Portrayal Scenarios
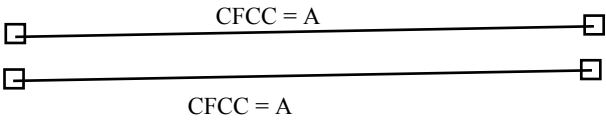
Title: Parking Lots	**No:** 0005	**Rev:** 1

Problem Description:

This scenario exist when the parking lot perimeter is not captured. A parking lot is an area for parking motor vehicles.

Problem:

TIGER Portrayal
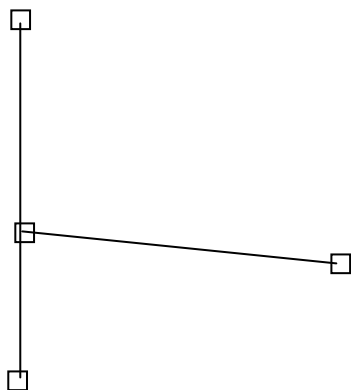
Source Imagery

Solution:

If a parking lot has perimeter through-lanes that lead from the road to a structure, capture them. Do not capture each individual parking lot row.

Suggested Fix: *Adjusted TIGER*

Delivered Improved TIGER File

MTAIP Portrayal Scenarios

Title: Underpasses and Overpasses	**No:** 0006	**Rev:** 1

Problem Description:

This scenario exists when a road has been improved to a dual divided highway and an overpass has been created. Note the centerline of underpassing road is obscured by bulk of overpass.
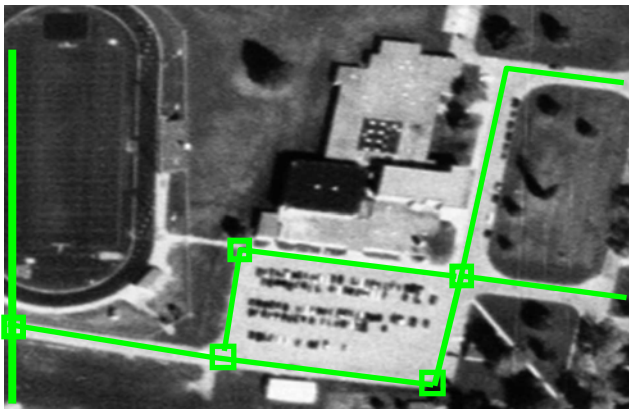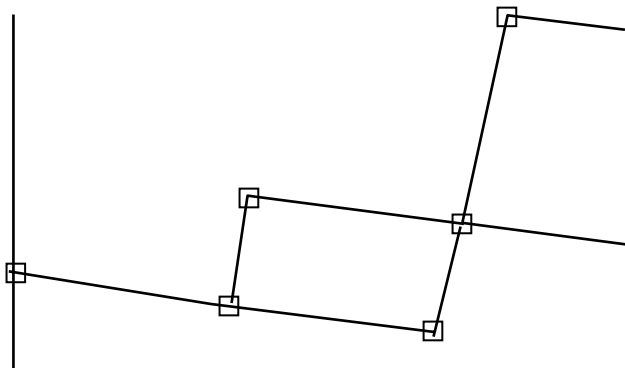
Problem:

TIGER Portrayal

CFCC = A

CFCC = A
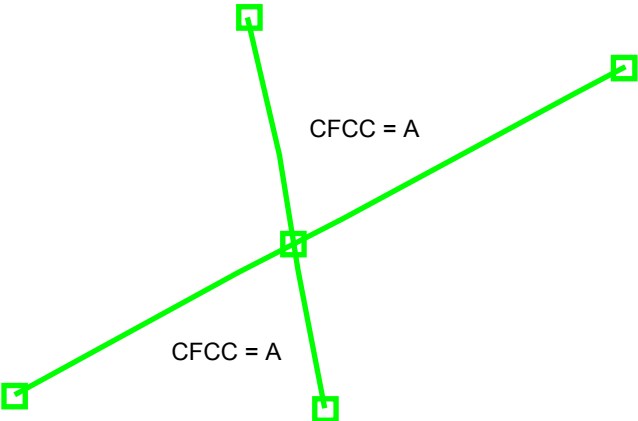
Source Imagery

Solution:

Adjust the existing road to overlay one side of the dual divided highway consistently. Create a new road feature to overlay the other side of the highway and the ramp (04, 05, 06). The underpassing roads should not break because they are obscured by the overpass. Create nodes where the roads intersect, and mark the nodes 01 and 02 as over/underpasses. Vector 03 is only marked as a bridge if the vector length is less than 240 feet.

Suggested Fix: *Adjusted and New TIGER*

Delivered Improved TIGER File

01
03
05
02
04
06
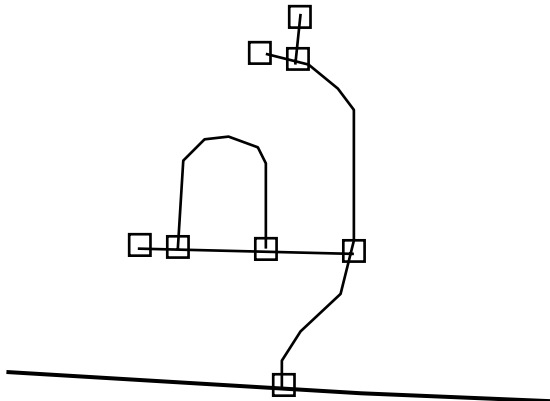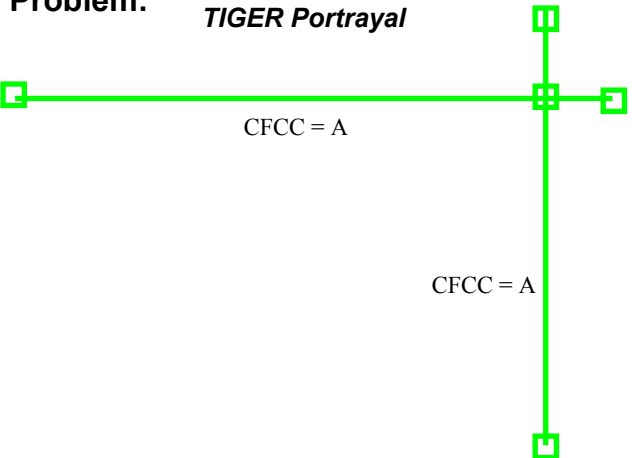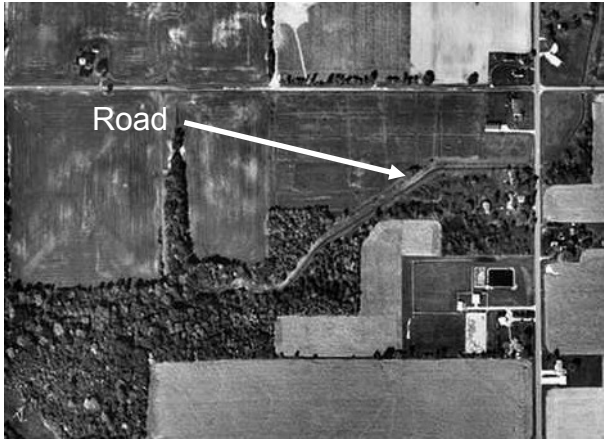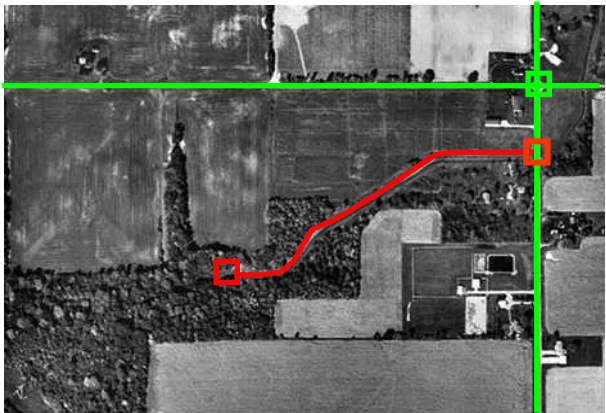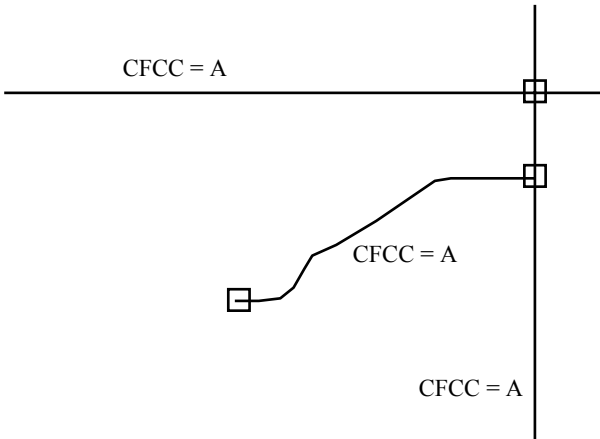
MTAIP Portrayal Scenarios

Title: Representation for Railroad Yards	**No:** 0007	**Rev:** 1

Problem Description:

This scenario exists when many spurs, sidings, and passing tracks are present in a railroad yard.

Problem:

TIGER Portrayal

CFCC = B

Source Imagery

Solution:

A railroad yard will be represented by portraying its outermost tracks and all through tracks. Do not collect spurs, sidings, or passing tracks inside railroad yard. Match existing TIGER to one perimeter and add new to collect the other perimeter.

Suggested Fix:

Adjusted TIGER

Delivered Improved TIGER File

Characteristic Main Track

Characteristic Spur

CFCC = B

MTAIP Portrayal Scenarios

Title: Roads Under Construction		**No:** 0008	**Rev:** 1

Problem Description:

This scenario exists when roads under construction are present in source imagery and not in TIGER data.

Problem:
TIGER Portrayal

Source Imagery

Solution:

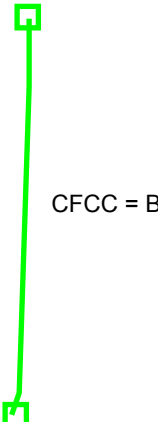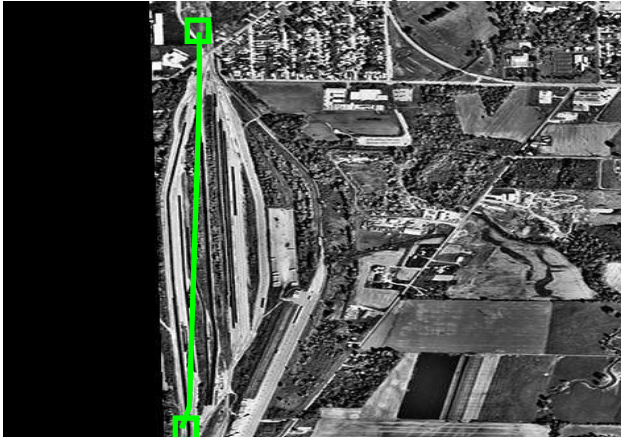Collect roads under construction if the road bed is well defined

Suggested Fix: *Adjusted TIGER*

Delivered Improved TIGER File

MTAIP Portrayal Scenarios

Title: Dead-End or Private Road	**No:** 0009	**Rev:** 1

Problem Description:

This scenario exists when a dead-end road is connected to the road network.

Problem:

TIGER Portrayal

CFCC = A

CFCC = A

Source Imagery

Road

Solution:

Capture the road until it terminates or as long as it is clearly visible on the imagery.
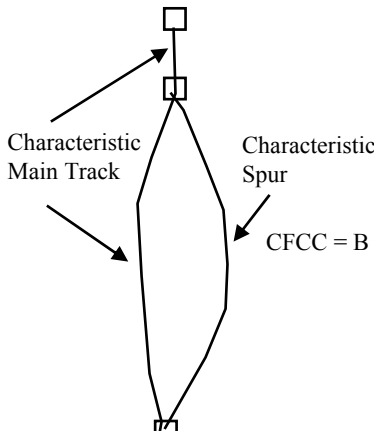
Suggested Fix: *Adjusted TIGER*

Delivered Improved TIGER File

CFCC = A

CFCC = A

CFCC = A

MTAIP Portrayal Scenarios

Title: Restricted/Private Roads	**No:** 0010	**Rev:** 1

Problem Description:

This scenario exists when a road exist that is not publicly accessible. These roads are typical in industrial areas, quarries, airports, and logging areas. These roads typically do not have any houses or through roads associated with them.

Problem:

TIGER Portrayal

CFCC = A

CFCC = A
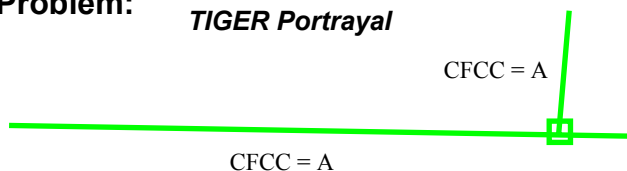
Source Imagery

Solution:

Capture all roads that within the restricted area as you would in a typical road network.

Suggested Fix:

Adjusted TIGER

Delivered Improved TIGER File

CFCC = A

CFCC = A

CFCC = A

CFCC = A
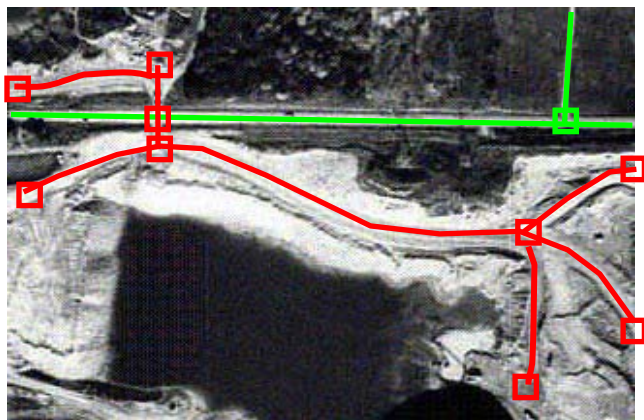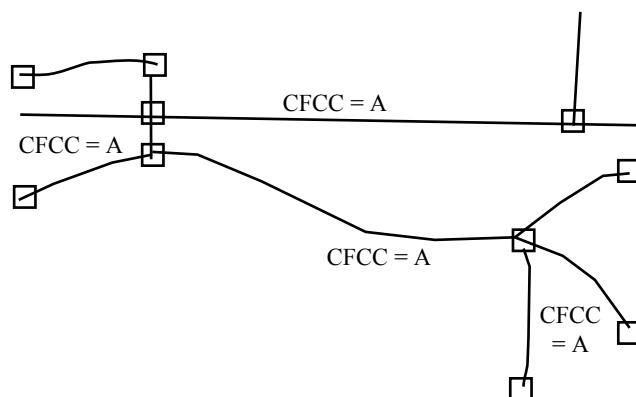
MTAIP Portrayal Scenarios

Title: Landmark Access Roads	**No:** 0011	**Rev:** 1

Problem Description:

This scenario exists when a limited access road network is present in a landmark area. Examples include cemeteries, parks, and marinas.

Problem: *TIGER Portrayal*	*Source Imagery*
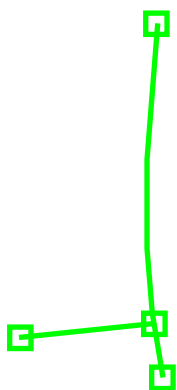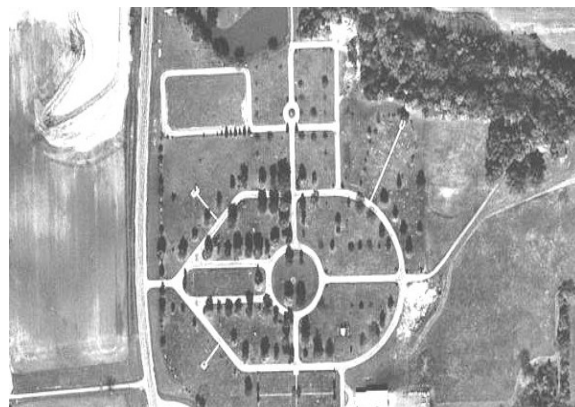
Solution:

Collect the road network in landmark areas.

Note: Nodes are not shown in the drawings below for simplicity purposes only.

Suggested Fix: *Adjusted TIGER*	*Delivered Improved TIGER File*
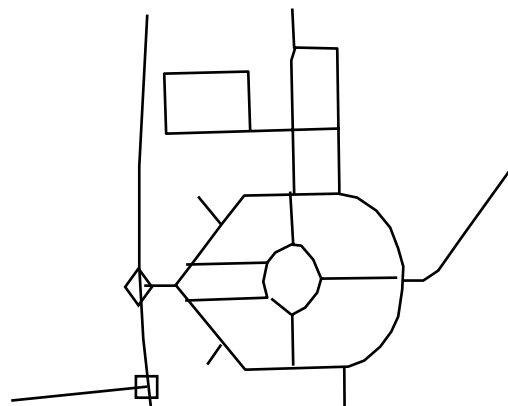
MAF/TIGER

Accuracy Improvement Project

Boundary Fidelity Guidelines

This document provides guidance for approaching and solving many of the boundary alignment scenarios that may be encountered while improving the MTAIP TIGER data files. Below are some general statements to keep in mind while performing the alignment of boundaries:

- Those TIGER boundaries that need to be preserved positionally and topologically while aligning features within a TIGER file are called "fidelity boundaries" . All boundaries referred to in this document are fidelity boundaries unless explicitly described otherwise.

- The Record Type 1 and Record Type G files in the Southbound data format contain a field called BFMF (Boundary Fidelity Maintenance Flag). These fields indicate whether the arc/boundary contained in the file is a "fidelity boundary" and should be treated as described in this document.

- The term "Shape Fidelity" refers to retaining the shape, cardinal direction and topological relationship of a boundary to adjacent points and arcs.

- Topology and the relationship of boundaries to matched, named roads have a higher priority over "shape fidelity" with a few exceptions. TIGER Boundary vectors should NOT be moved or vectors added to match a source boundary if the topology of the TIGER file will be changed (rubber sheeting of boundaries is permitted to preserve fidelity). This applies to all fidelity boundaries other than county boundaries. However, the topology of a TIGER county boundary may be changed to match a local county boundary when/where directed to do so.

- Maintaining the "shape fidelity" of the overall boundary of an entity is a higher priority than maintaining the shape fidelity of an individual boundary segment (for F class and unmatched features). For example, the shape of an entity boundary is a perfect square, attempt to retain that square shape as much as possible.

- If a named road is coincident with a boundary in TIGER and in the source file, and the two files show the road/boundary in different geographic locations, maintain the boundary/named road relationship when the road is moved.

- If a matched, named road is either inside or outside a boundary in the TIGER files (other than the county boundary), then the boundary must retain that relationship with the road when the road is realigned even if that means changing the boundary shape.

Conflation Scenario:

Definition of the problem

Original

TIGER Portrayal

Node ◻——— Road ———◻

◻- - - - - - - ◻
Boundary

A graphic portraying the scenario as it exists in original TIGER.

Source Portrayal

◻——— Road ———◻

◻- - - - - - - ◻
Boundary

A graphic portraying the same scenario as it exists in the source file

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

TEMPLATE

A graphic portraying the improved TIGER after matched features are adjusted to the source material but before boundary shape fidelity review

A graphic portraying any new vectors added to the TIGER file based on the source material

End Result

Solution

Delivered Improved TIGER

Text or graphic explanation of the solution

A graphic of the portrayal solution including both improved TIGER and New TIGER

Summary

Conflation Scenario: **#1 Coincident Road/Boundary in TIGER. Local Boundary file exists.**

This scenario exists when an unmatched road and boundary are coincident in TIGER but only the boundary exists in the source file.
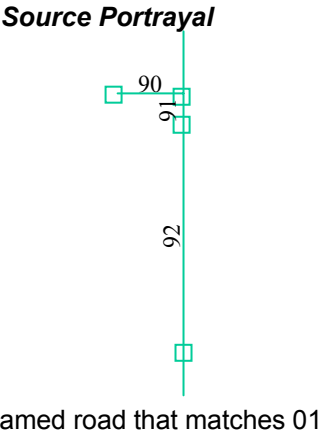
Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

The boundary is moved to the location of the boundary in the source, and the unmatched road (08) is moved to maintain the topology and relationship to the boundary.

Delivered Improved TIGER

Summary

Conflation Scenario: **#2 Coincident Road/Boundary in TIGER and Source. No local boundary file.**

This scenario exists when a TIGER boundary is coincident with a matched, named road, and the source file portrays that road in a different position than TIGER.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

Since a matched, named road exists in the source, and it won't violate the topology to move the coincident road/boundary, the road/boundary is moved in TIGER. Vectors 07 and 09 should be returned to their original shape and cardinal direction if possible.

Delivered Improved TIGER

Summary

Conflation Scenario: **#3 Coincident Road/Boundary in TIGER but unmatched road in source. No local boundary file.**

This scenario exists when a TIGER boundary is coincident with an unmatched road in TIGER.

Original

TIGER Portrayal

01   02   03
11   08   13
07   09
10   12
04   05   06

Source Portrayal

90   91   92
96
93   97   95
94

Suggested Fix

Adjusted TIGER portrayal

01   02   03
07   11   08
10   13   09
04   05   12   06

New TIGER vectors

End Result

Solution

Since the road segment in TIGER is unmatched to the source, the road and the boundary will be realigned to maintain the overall shape fidelity of the boundary to the maximum extent possible.

Delivered Improved TIGER

01   02   03
11   13
07   08   09
10
04   05   12   06

Summary

Conflation Scenario: #4 Named Roads. No local boundary file.

This scenario exists when a matched, named road is outside of a boundary in the Source, but the matching named road exists inside of the boundary in the TIGER data.

Original

TIGER Portrayal

01 is a named road

Source Portrayal

90 is a named road that matches 01

Suggested Fix

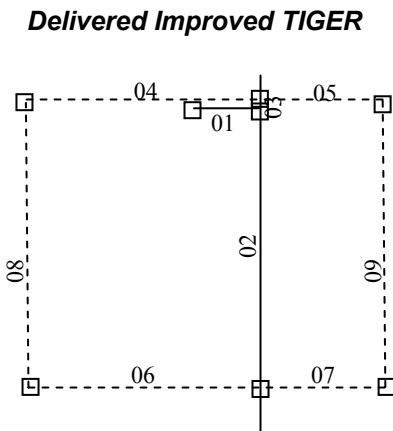### *Adjusted TIGER portrayal*
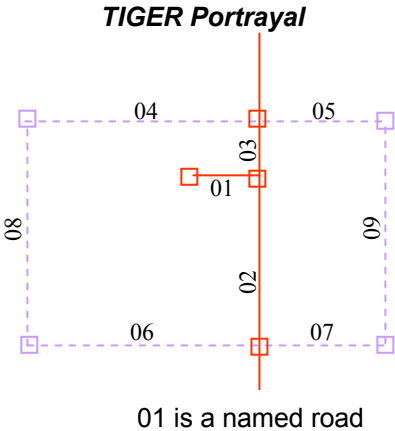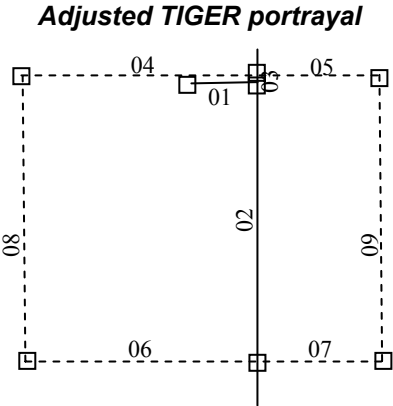
New TIGER vectors

End Result

Solution

TIGER arc 01 is moved to the position of the Source arc 90. The boundary is moved to enclose the arc.

Delivered Improved TIGER
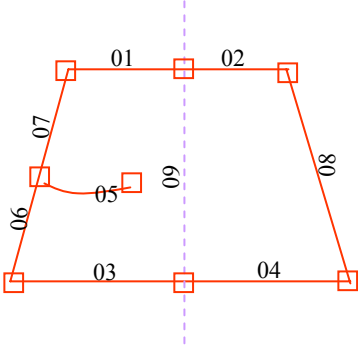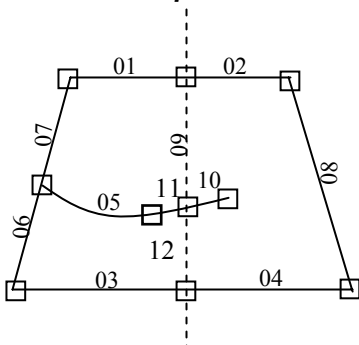
Summary

This solution is only temporary in order to maintain the topology of the boundary. A subsequent process by the Census Bureau will move the boundary to match the coordinates of the boundary in the source file and to change the topology so that the road is located outside of the boundary.

Conflation Scenario: **#5 Road intersects boundary in TIGER. No local boundary file.**

This scenario exists when a matched, named road intersects a boundary in the TIGER data, but will not intersect the boundary when aligned to the Source data
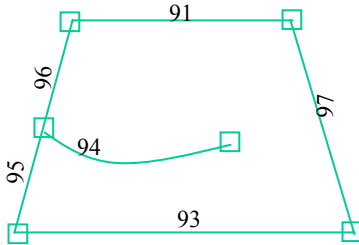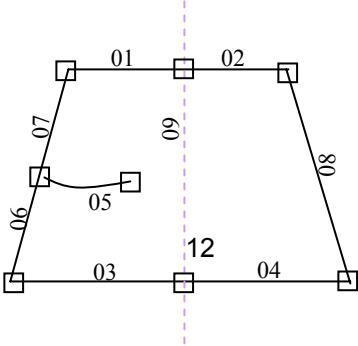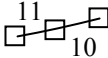
Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

Rather than move the boundary to maintain its relationship to the road, the boundary is detached from the road in TIGER and aligned to maintain shape fidelity.

Delivered Improved TIGER

Summary

Conflation Scenario: #6 Road is realigned in Source. No local boundary file.

This scenario exists when a matched, named road is longer in source, but does not intersect the boundary in the TIGER data. There is no boundary source except TIGER.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

The TIGER arc 05 is adjusted to the coordinates of the source file only to the degree that maintains the fidelity of the boundary, and then two new arcs, 10 and 11, are added to complete the feature as shown in the source.

Delivered Improved TIGER

Summary

Conflation Scenario: **#7 Neighborhood intersecting boundary. No local boundary file.**

This scenario exists when a TIGER boundary intersects a neighborhood, but the Source has the same neighborhood in a mirror image on the opposite side of the street.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result
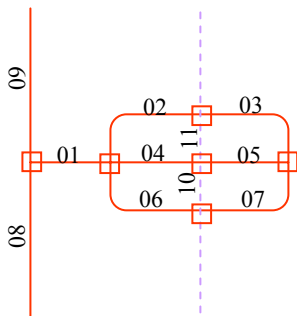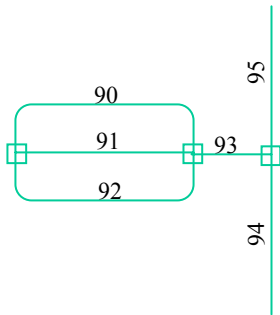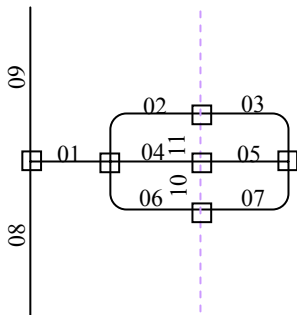
Solution

In this scenario, the neighborhood in TIGER is marked for delete, and the boundary is preserved in its original position. The neighborhood depicted in the Source is added to TIGER, and the incorrect location is marked as un-matched.

Delivered Improved TIGER

Summary

Conflation Scenario: **#8 Road/Boundary Shift. Boundary file or no boundary file.**

This scenario exists when the source portrays a road that is a boundary in TIGER as well as an entrance to a neighborhood that doesn't exist in the source. The road is shown in a different geographical location in the source.

Original

TIGER Portrayal

Source Portrayal
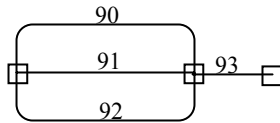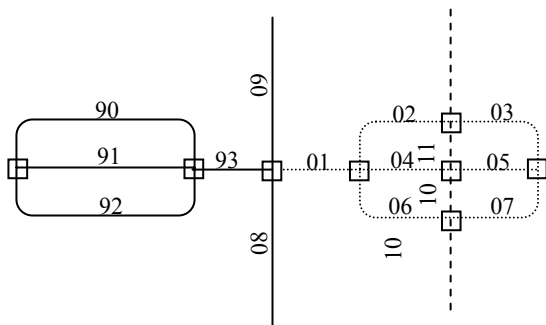

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result
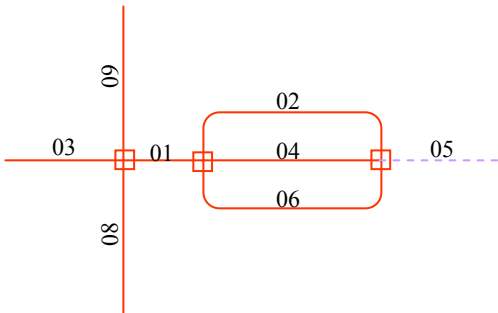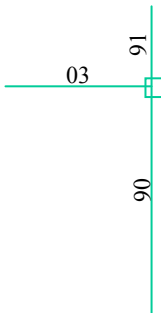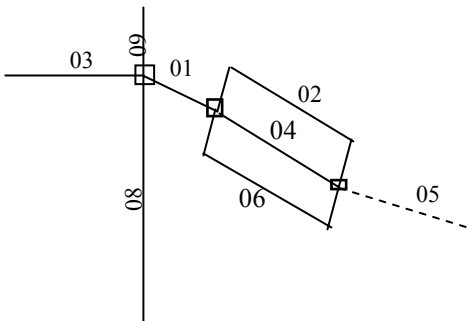
Solution
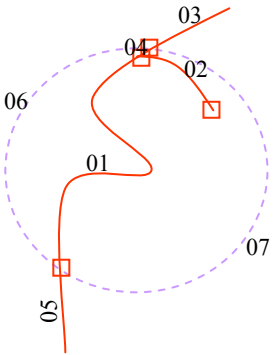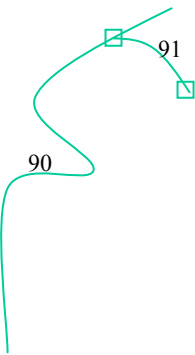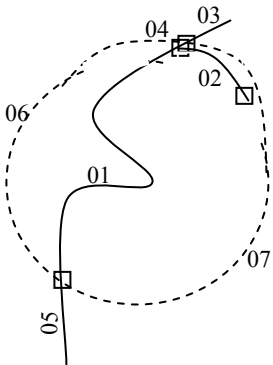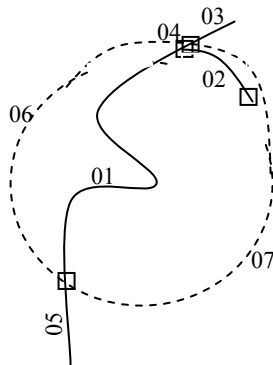
In order to maintain shape of the boundary, the neighborhood shown in TIGER is realigned from its initial rubber sheeted position to maintain the shape fidelity of the boundary. Neighborhood in TIGER would be left un-matched.

Delivered Improved TIGER

Summary

Conflation Scenario: #9 Circular Boundaries. No local boundary file.
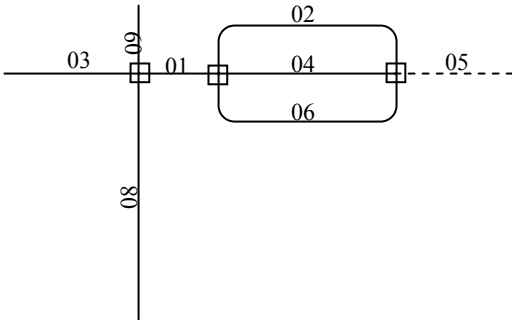
This scenario exists in the cases where cities are defined by a circle with a set radius from a central point within the city. In this case, TIGER portrays a road inside the boundary, and the source portrays the road in a position that would be outside the boundary (based on TIGER as the source for the boundary).

Original

TIGER Portrayal

03
04
02
06
01
07
05

Source Portrayal

91
90

Suggested Fix

Adjusted TIGER portrayal

04 03
02
06
01
07
05

New TIGER vectors

End Result

Solution

This scenario is addressed by moving 02 to the new location and by moving the boundary in TIGER to include the road within the boundary. In this case, the shape fidelity is not maintained because expanding the radius of the circle would likely enclose many roads that were previously outside of the boundary. However, maintain as much as possible the curved circle shape.

Delivered Improved TIGER

04 03
02
06
01
07
05

Summary

Conflation Scenario: **#10 Boundary Annexation in Source** *(Internal boundary only).* **Local boundary file exists.**

This scenario results when the boundary in the local source and the TIGER boundary do not match due to the local file depicts a recent annexation. The prohibition on changing the topology of TIGER to maintain fidelity prohibits the exact portrayal of the boundary as it exists in the local boundary source file.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

Match the original TIGER boundary to the local boundary file to the extent possible without creating a topological change.

Delivered Improved TIGER

Summary

Harris should not add lines or create new points in order for the TIGER boundaries to match the internal boundaries in a local file if that movement will create topologic changes in the TIGER file. The Census Bureau will conduct a process where it will incorporate those boundary segments of the local file that do not match the boundary segments in TIGER.

Conflation Scenario: **#11 Feature shift effects on internal boundary. No local boundary file.**

This scenario occurs when TIGER is the boundary source, but there has been a shifting in the location of matched, named roads.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

The road network is matched to the source, and the boundary is rubber-sheeted to maintain its vertical shape.

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Summary

#12 Local Road File differs topologically from TIGER at *County Boundary*.

Conflation Scenario: **Local Boundary file exists in this example, but this same scenario can apply when there is no local boundary file.**

This scenario occurs when there is a topologic difference in features at the location of the county boundary in the local source file (boundary source) and TIGER, and the county boundary does not move because it matches the coordinates of the local boundary source.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

Detach vector 01 from vectors 02 and 03, and add new vector 50 and attach to F10 (county boundary).

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Summary

Conflation Scenario: #13 Local File differs from TIGER at County Boundary. Local Boundary file exists in this example, but this scenario could apply when there is no local boundary file.

This scenario occurs when there is a topologic difference in the location of the county boundary in the local source file (boundary source) and TIGER, but the county boundary does not move.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

Vector 01 is detached from county boundary and repositioned. Vector 50 is added to split vector 02.

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Summary

Conflation Scenario: **#14 Topologic difference between TIGER and source. Local boundary file exists.**

This scenario occurs when there is a topologic difference for an internal boundary (MCD, place, etc) between the local source file and TIGER. *Topology must be maintained*.

Original

TIGER Portrayal

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

New TIGER vectors

End Result

Solution

Harris will be unable to maintain shape fidelity of vectors 08 and 06 since complete boundary adjustment will not be possible.   Topology cannot change for adjustments made to internal boundaries. Census will add line from the ring file.

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**Summary**

Conflation Scenario: **#15 County boundary is coincident with several matched features. No local boundary file.**

This scenario illustrates when to flag boundary segments when shape fidelity cannot be maintained.

Original

TIGER Portrayal

01
02
03
F10 14 04
06
07 05
08
09
10
11
12
13

Source Portrayal

90 91 92
94 93 95
96 97
98 99
100 101
102

Suggested Fix

Adjusted TIGER portrayal

01
02
03
F10 14 04
06
05
07
08
09
10
11
12
13

New TIGER vectors

End Result

Solution

The matching roads in TIGER are aligned to the local source file, which distorts the county boundary. In this case, nothing can be done to preserve the original shape fidelity of the boundary in TIGER. Vectors 09 and 14 would be flagged as having changed from the original boundary shape.

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01
02
03
F10 14 04
06
05
07
08
09
10
11
12
13

Summary

Conflation Scenario: **#16 Preserve shape fidelity by sliding boundary (vectors) at point (intersection) along a feature.**

This scenario exists when an analyst can preserve shape fidelity of the segment by sliding the intersecting F10 vectors along a feature to reclaim the original shape and position of the boundary.
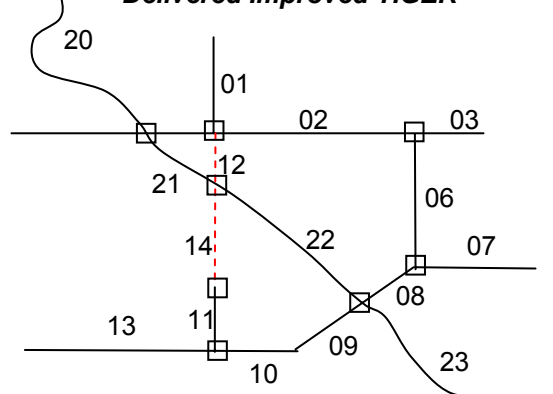
Original
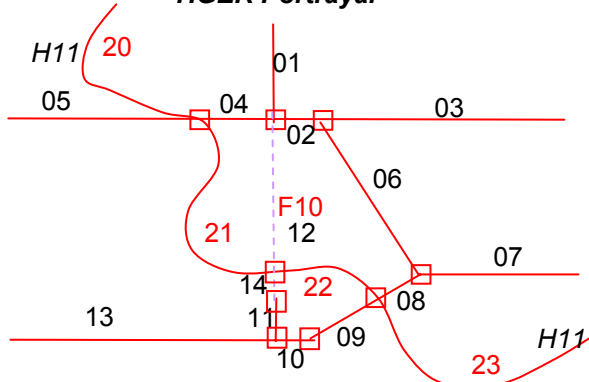
TIGER Portrayal

Source Portrayal
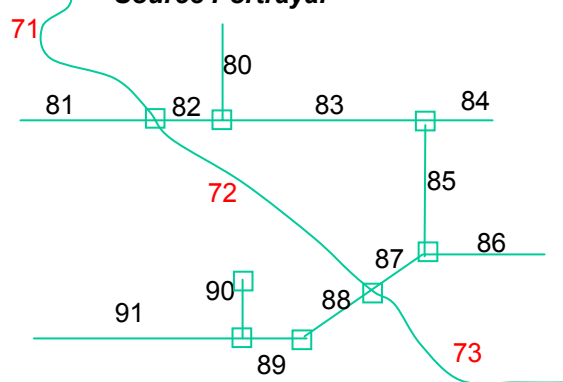
Suggested Fix

Adjusted TIGER portrayal
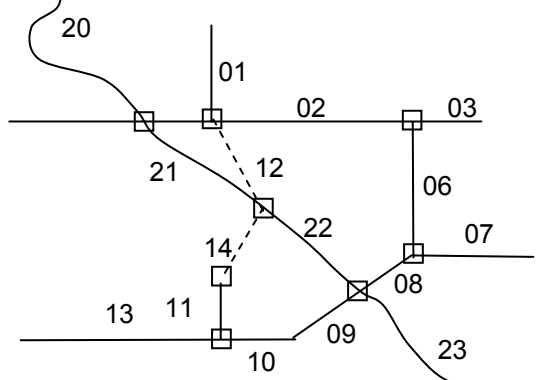
New TIGER vectors

End Result

Solution

Vectors 12 and 14 (F10s) can slide at intersection point along vectors 21 and 22 back to a position that preserves shape fidelity for the line segments.

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Summary

Conflation Scenario: **#17 Effect of double line hydro on county boundary. No local boundary file.**

This scenario exists when a single line hydro feature in TIGER, which is also a county boundary, changes from single line to double line in the hydro source file.

Original

TIGER Portrayal

H11 and boundary

01

Source Portrayal

H01

90

91

Suggested Fix

Adjusted TIGER portrayal

01

New TIGER vectors

H01

50

End Result

Solution

One shoreline, vector 91, is added to TIGER as vector 50. Original single line hydro vector (01) is moved to middle of water feature. Second shoreline, vector 90, is added to the adjacent county when it is worked.

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01

50

*H class feature, characteristics of a shoreline, water to left.*

Summary

Conflation Scenario: **#18 Adjusting County Boundary when Reference Source extends past the TIGER boundary**
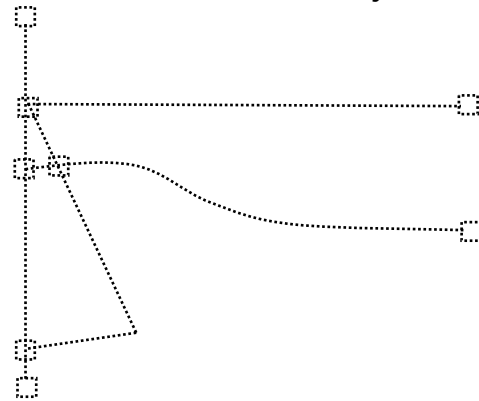
This scenario describes how to match a TIGER outside county boundary when no source boundary file is present and the source file contains data outside the county extent. Counties which meet this requirement will be identified as such to the analyst.
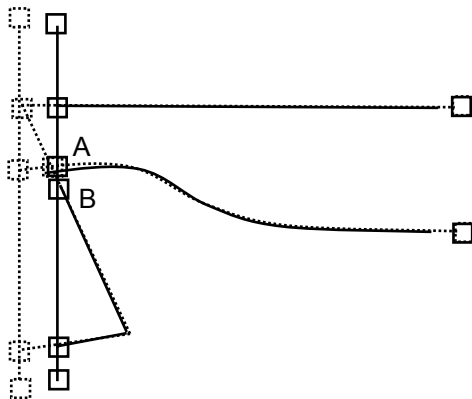
Original

TIGER Portrayal
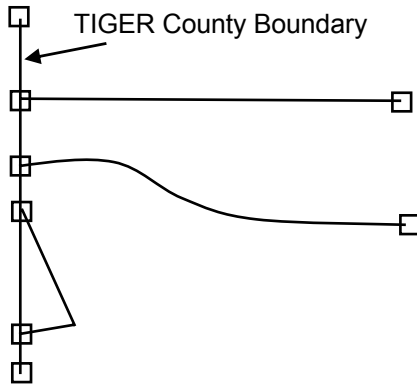
TIGER County Boundary

Source Portrayal

Suggested Fix

Adjusted TIGER portrayal

A
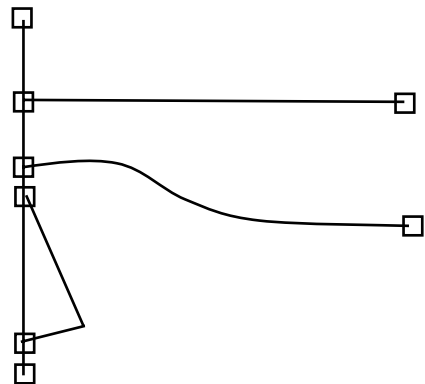
B

New TIGER vectors

End Result

Solution

In the absence of an accurate boundary source, the directions to the analyst are to leave the TIGER boundary exactly where it is in the original TIGER file. This entails using TIGER CAT's "Shift + Click" matching action to snap the TIGER node to the point at which it intersects with a county arc. No positional adjustments are made to the TIGER nodes except along the boundary vector itself. The county arcs that remain outside the county boundary will not be added to the file, and are left unused. In this example, Node "A" is Control+Clicked to the source node, and Node "B" is Shift+Clicked to the county vector.

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Summary